

Serial No. 09/936,104

4

AMENDMENT TO THE DRAWINGS

Figs. 2, 3, 5, 6 and 7 have been amended.

Attachment Replacement Sheets.

REMARKS

Reconsideration of this application as amended is now being requested. Claims 1-2 and 4-6 are now in this application. Claims 1 and 3-6 have been amended. Claim 2 has been canceled.

Figures 2, 3, 5, 6 and 7 was objected to for various reasons, such as missing or duplicate reference characters and failure to designate by figures as prior art. Appropriate correction has been made. Amended figures 2, 3, 5, 6 and 7 are attached herein.

The application was alleged to not contain an abstract of disclosure as required by 37 CFR 1.72(b). An abstract of disclosure on a separate sheet is attached herein.

Claims 4-6 were objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. Claims 4-6 have been amended and are no longer multiple dependent claims.

Claim 6 recites the limitation "the data packets" in line 2. It was suggested that "the data packets" be changed to "data packets". Claim 6 has been amended accordingly.

The disclosure was objected to because of a number of informalities. In particular, it was suggested that "channelisation" be changed to "channelization", and that "characterized" be changed to "characterized" throughout the specification and claims. Applicants respectfully disagree. It is respectfully submitted that (a) the standard British English spellings of the words "characterised" and "channelisation" give rise to no lack of clarity, and (b) there is no statutory requirement to amend British English spelling to American English spelling in the absence of lack of clarity.

Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by Gilhousen WO 95/03652 A. Claim 1 has been amended to include all the limitations of claim 3. Claim 3 has been canceled. Applicants respectfully traverses. Amended claim 1 requires “wherein the selected node for a user must not coincide with a node reserved by another user only if the user and the other user are operational at the same time” (emphasis added). Amended claim 1 is novel to the standard of 35 USC 102(b) in that Gilhousen (WO 95/03652) does not disclose this feature. Amended claim 1 also meets the standard of 35 USC 103 over Gilhousen, in that this feature is nowhere there suggested. Specifically the passage of Gilhousen cited by the Examiner as being relevant is page 16 lines 26 to 28 which reads as follows:

a code is assigned to a particular channel. When it is desired to initiate an additional code assignment, a set of potentially assignable codes are identified by searching the list. This set of codes would include only those codes not recursively related by equation (1) to a currently assigned code. That is, the set would include only those codes not capable of being derived from an assigned code, and the codes from which the assigned code is capable of being derived.

To paraphrase this passage, in the approach of Gilhousen, assignment of overlapping codes is not permitted, apparently at any time.

Gilhousen, which is in line with the prior art approach to channelisation code allocation described in respect of Figure 2 of the present application, forbids the allocation of overlapping code branches. In the specific Figure 2 example, this is done by applying numbered rules 1 and 2 described on page 5 lines 22 to 29 of the present application. On the other hand, the present invention allows the allocation of overlapping code branches to two users unless the two users are both operational at the same time (see e.g. page 14 lines 1 to 4 which states “It is also possible that any two users may in any event not be operating at the same time. Thus even if a clash exists between a selected node and a reserved node there may be no detriment to performance if the two users do not operate at the same time.”)

Only at the time of data transmissions is the requirement that there be no overlap enforced. This takes advantage of the practical reality that users do not operate using their maximum data rates at all times, and addresses problems of a shortage of codes preventing a user making a call connection.

To explain further, consider the simple example of three users, each requiring a channelisation code of spreading factor 2. Consider downlink transmissions comparing the prior art approach, see Figure 2 of the present application for ease of explanation, to an example of the approach of the present invention, see Figure 4 of the present application.

Prior Art Approach

The reader is referred to the enclosed Explanatory Figure 1 and Figure 2 of the present application. As shown in Figure 2 steps 204, 206, the User N is initially User 1. User 1 is provisionally allocated node C2,1. As shown in step 208. Rules 1 and 2 are applied to User 1. Since it is the first user, Rules 1 and 2 are not violated. Accordingly User 1 is reserved all the nodes in the path of C2,1 in accordance with Rules 1 and 2. Going onto step 210, the User N+1 is simply User 2. User 2 may select again C2,1. As shown in step 212, User 2's origin node is checked to find out whether it breaks Rules 1 and 2. If it breaks the rule, the process, goes to step 216. According to step 216, the next possible node is selected which is C2,2 and this does not break Rules 1 and 2.

Accordingly the process moves to step 214, whereby User 2 is allocated C2,2 and reserved all the nodes as a result of Rules 1 and 2. At Step 220 a question is raised where $N+1=M$ where M is the number of users. Since it is not, User 3 may select C2,1 again and goes through step 212 and 216, where it is found that no code of spreading factor 2 can be selected. Accordingly, User 3 is not given a code.

Inventive Approach

The reader is referred to the enclosed Explanatory Figure II, and Figure 4 of the present application. As shown in Figure 4 step 406, all users (User 1, 2 and 3) are allocated an origin node depending on the lowest spreading factor needed. In this case, the lowest spreading factor is 2 for all users. User 1 is allocated C2,1 as origin node. User 2

and User 3 are both allocated C2,2 as origin node. The process assumes that spreading factor of each user will not be 2 for every data transmission.

As shown in Figure 4 step 408, a code branch is allocated to user, for example dependent on data rates required. For example, User 1 is allocated path C2,1, C4,1 and C8,1. User 2 is allocated C2,2 and C4,3. User 3 is allocated C2,2, C4,4 and C8,8, as shown in Explanatory Figure II.

Referring to step 410, at data transmission although overlapping branches have been allocated to different users, the process has to ensure that the same code is not used at the same time. Hence, step 412 and step 416 are applied, ensuring that Rules 1 and 2 are not violated during data transmissions.

If those rules are violated meaning there is overlap, the process seeks to redefine the origin node and code branch in order to allow the user to acquire its desired rate.

Consider for example, data transmissions for which in view of desired data rates the desired spreading factors for User 1, 2 and 3 are a spreading factor of 2 for user 1 and a spreading factor of 4 for user 2 and user 3. C2,1 is used as origin node for User 1, C4,3 for User 2 and C4,4 for User 3.

Consider another example where this time there is a clash. In view of desired data rates the desired spreading factors for User 1, 2 and 3 are all desired to be 2. The process will attempt to redefine the origin node and code branch where possible. As it is not possible for all three to have this spreading factor of 2, both User 2 and 3 have to compromise taking a spreading factor of 4 and so transmitting at a lower rate.

Dependent claims 2, and 4 to 6 are patentable not least on the basis that they each depend on an allowable amended claim 1.

In view of the foregoing, allowance of all the claims presently in the application is respectfully requested, as is passage to issuance of the application. If the Examiner should feel that the application is not yet in a condition for allowance and that a

telephone interview would be useful, he is invited to contact Applicant's undersigned attorney at 973 386 6377.

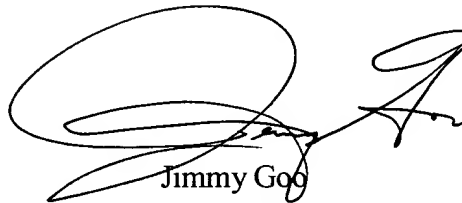
An one month extension is due.

Respectfully submitted,

Qiang Cao

Seau Sian Lim

Jens Mucckenheim

A handwritten signature in black ink, appearing to read 'Jimmy Goo', with a large, stylized loop at the beginning and a trailing flourish.

Reg. No. 36,528

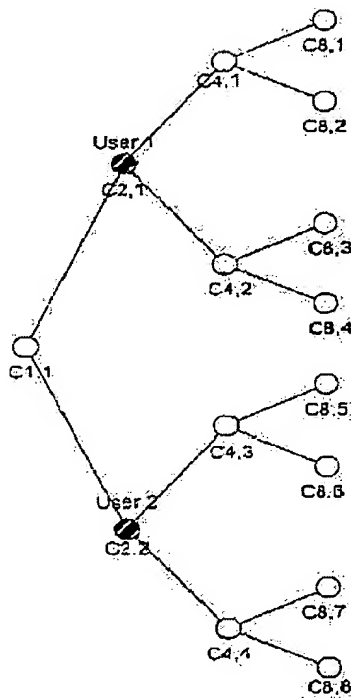
Date: **April 13, 2005**

Attachments: Replacement Drawing Sheets

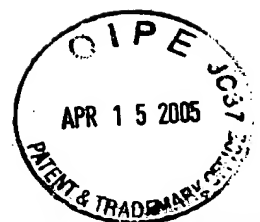
Abstract of the Disclosure

Explanatory Figs. I and II

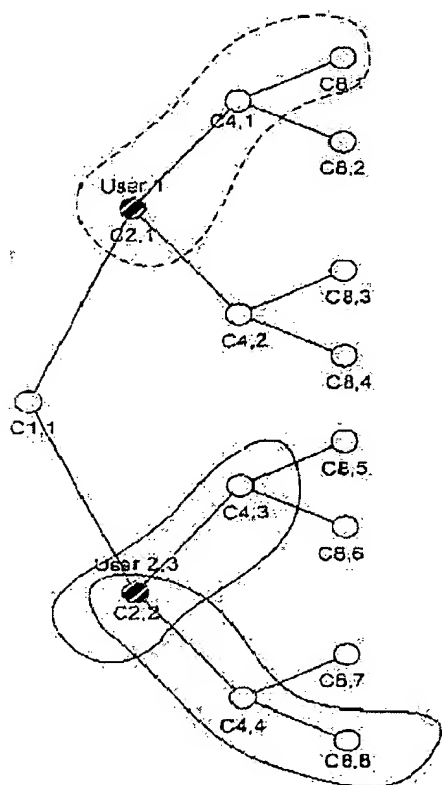
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Explanatory
Figure I



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Explanatory
Figure II